CLAIMS

What is claimed is:

1. An appendable device, comprising:

a housing adapted to be mounted to a surface;

a memory disposed within the housing;

an input/output interface disposed within the housing, wherein the input/output interface is adapted to communicate with one of a sensor and a control output operatively coupled to the appendable device; and

a processor disposed within the housing and communicatively coupled to the memory, wherein the processor is programmed to communicate with the input/output interface and to communicate information related to the one of the sensor and the control output, as the information becomes available, to another device via a communication network.

2. The appendable device of claim 1, wherein the processor is further programmed to enable the appendable device to perform at least a part of a closed-loop process control algorithm.

3. The appendable device of claim 1, wherein the processor is further programmed to diagnose a condition associated with one of the appendable device and a process associated with the appendable device.

4. The appendable device of claim 1, wherein the processor is further programmed to detect an alarm condition and to send alarm information to the other device via the communication network in response to detecting the alarm condition.

5. The appendable device of claim 1, wherein the other device is a wireless handheld device.

6. The appendable device of claim 1, wherein the processor is further programmed to enable the appendable device to function as a part of a communication path for another appendable device.

7. The appendable device of claim 1, wherein the one of the sensor and the control output operatively coupled to the appendable device is disposed within the housing.

8. The appendable device of claim 1, wherein the communication network uses one of a wireless and a hardwired communication technique.

9. The appendable device of claim 8, wherein the one of the wireless and the hardwired communication technique includes the use of an internet.

10. The appendable device of claim 1, further including a power source disposed within the housing and adapted to generate power in response to vibration of the surface.

11. The appendable device of claim 1, further including a power source disposed within the housing, wherein the power source uses one of a capacitor, a battery, light and a magnetic field to provide power to the appendable device.

12. The appendable device of claim 1, wherein the housing is adapted to be mounted to the surface using one of an adhesive, a screw, a clamp, a tie-wrap and a magnet.

13. The appendable device of claim 1, wherein the housing is adapted to be mounted within one of a rugged environment and a hazardous environment.

14. An appendable device, comprising:

an antenna;

a transceiver communicatively coupled to the antenna;

a processor communicatively coupled to the transceiver, wherein the processor is programmed to perform one of a periodic data monitoring activity and a process control activity;

a memory communicatively coupled to the processor;

an input/output interface adapted to operatively couple the processor to one of a sensor and a control output; and

a housing that holds the transceiver, the processor, the memory and the input/output interface, wherein the housing is adapted to be attached to a surface.

15. The device of claim 14, further including a power source disposed within the housing, wherein the power source provides power using one of a capacitor, a battery, vibrations, light and a magnetic field.

16. The appendable device of claim 14, wherein the antenna is one of a wire whip, a coil formed integrally with the housing, a coil formed using conductive traces on a printed circuit board, and a discrete wire coil.

17. The appendable device of claim 14, wherein the processor is programmed to convey information between the input/output interface and the transceiver.

18. The appendable device of claim 14, further including a termination portion adapted to electrically couple wires to the input/output interface.

19. The appendable device of claim 18, wherein the termination portion includes one of screw terminals, solder pads and jacks.

20. The appendable device of claim 14, further including one of a sensor and a control output disposed within the housing.

21. The appendable device of claim 14, further including an electrical conductor extending from the housing for communicatively coupling one of a sensor and a control output to the input/output interface.

22. The appendable device of claim 14, wherein the housing is adapted to be attached to the surface using one of an adhesive, a self-tapping screw, a self-threading screw, a magnet, a clamp and a tie-wrap.

23. The appendable device of claim 14, wherein the housing is adapted to be attached to a sheet metal surface.

24. The appendable device of claim 14, wherein the surface is associated with a piece of equipment within a process.

25. The appendable device of claim 14, wherein the housing is adapted to be mounted within one of rugged environment and a hazardous environment.

26. The appendable device of claim 14, wherein the processor is programmed to communicate with another remotely situated device using a wireless communication technique.

27. The appendable device of claim 26, wherein the other remotely situated device is one of a controller, another appendable device and a workstation.

28. The appendable device of claim 14, wherein the processor is programmed to perform one of a data monitoring activity, a data analysis activity and a control activity.

29. The appendable device of claim 14, wherein the input/output interface is adapted to communicate with a plurality of sensors.

30. The appendable device of claim 14, wherein the input/output interface is adapted to communicate with a plurality of control output devices.

31. The appendable device of claim 14, wherein the processor is programmed to facilitate automatic configuration of a process control system.

32. An appendable device, comprising:

a housing adapted to facilitate surface mounting of the appendable device;

a power source disposed within the housing;

a transceiver disposed within the housing;

an antenna coupled to the transceiver and adjacent to the housing;

a memory disposed within the housing;

an input/output interface disposed within the housing;

a sensor coupled to the input/output interface; and

a processor communicatively coupled to the memory, the transceiver and the input/output interface, wherein the processor is adapted to execute software stored in the memory to sense a parameter using the sensor and to use the transceiver and the antenna to transmit information associated with the sensed parameter to another device via a wireless communication network as the information becomes available.

33. The appendable device of claim 32, wherein the housing is adapted to enable surface mounting of the appendable device using one of an adhesive, a screw, a clamp, a magnet and a tie-wrap.

34. The appendable device of claim 32, wherein the power source is adapted to generate power in response to vibration of the surface.

35. An appendable system for controlling a process, comprising:

a plurality of appendable devices, each of which includes an antenna, a transceiver, a processor, a memory, an input/output interface adapted to enable the processor to communicate with one of a sensor and a control output, and a housing adapted to facilitate surface mounting of the appendable device; and

a computer system adapted to communicate with one or more of the plurality of appendable devices so that a first one of the plurality of appendable devices senses a first parameter of the process and a second one of the plurality of appendable devices controls a second parameter of the process based on the first sensed parameter.

36. The appendable system of claim 35, wherein the process is a closed-loop process.

37. The appendable system of claim 35, wherein each of the plurality of appendable devices is adapted to generate information associated with one of an alarm condition of the process and a condition of the appendable device.

38. The appendable system of claim 35, wherein the computer system is further adapted to configure the plurality of appendable devices based on configuration information stored in one of a central database and the plurality of appendable devices.

39. The appendable system of claim 35, wherein the computer system is further adapted to perform a security function that prevents unauthorized access to the appendable system.

40. The appendable system of claim 35, wherein the computer system is further adapted to interface with a wireless handheld device.

41 The appendable system of claim 35, wherein each of the plurality of appendable devices includes an internal power source that provides power using one of a capacitor, a battery, vibrations, light and a magnetic field.

42. The appendable system of claim 35, wherein the housing is adapted to be mounted to a surface using one of an adhesive, a screw, a clamp, a magnet and a tie-wrap.

43. The appendable system of claim 35, wherein the antenna is one of a wire whip, a coil integrally attached to the housing, conductive traces on a printed circuit assembly and a discrete wire coil.

44. The appendable system of claim 35, wherein the computer system is one of a controller and a workstation.

45. An appendable system for use with a process, comprising:

a plurality of appendable devices, each of which includes an antenna, a transceiver, a processor, a memory, an internal power source, an input/output interface adapted to enable the processor to communicate with a sensor, and a housing adapted to enable mounting of the appendable device to a surface, wherein each of the processors is programmed to enable its respective appendable device to communicate with another one of the plurality of appendable devices; and

a workstation adapted to communicate with one or more of the plurality of appendable devices so that one of the plurality of appendable devices senses a parameter of the process and communicates information associated with the sensed parameter to the workstation.

46. The appendable system of claim 45, wherein the housing of each of the plurality of appendable devices is adapted to be mounted to the surface using one of an adhesive, a screw, a clamp, a magnet and a tie-wrap.

47. The appendable system of claim 45, wherein the one or more of the plurality of appendable devices communicates the information associated with the sensed parameter to the workstation via a communication network.

48. The appendable system of claim 47, wherein the communication network uses one of a wireless and a hardwired communication technique.

49. The appendable system of claim 45, wherein each of the plurality of appendable devices is identical to the other appendable devices.

50. The appendable system of claim 45, wherein each of the plurality of the appendable devices is adapted to communicate with a plurality of sensors and a plurality of control outputs.

51. A system for use with a process, comprising:

a plurality of devices, each of which includes a processor, a memory, an internal power source, an input/output interface adapted to enable the processor to communicate with a sensor, and a housing adapted to enable mounting of the device to an equipment surface, wherein each of the processors is programmed to enable its respective device to communicate with another one of the plurality of devices; and

a workstation adapted to communicate with one or more of the plurality of devices so that one of the plurality of devices senses a parameter of the process and communicates information associated with the sensed parameter to the workstation.

52. The system of claim 51, wherein each of the plurality of devices is identical to the other devices.